PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

29 DEC 2004

Applicant's or agent's file reference ACM 2948 WO	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/07327	International filing date *(day/month/year)* 07.07.2003	Priority date *(day/month/year)* 10.07.2002
International Patent Classification (IPC) or both national classification and IPC C08B11/20		
Applicant AKZO NOBEL N.V.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
15.12.2003	11.11.2004
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Lensen, H Telephone No. +31 70 340-2428

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/07327

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-17 as originally filed

Claims, Numbers

1-10 received on 09.03.2004 with letter of 08.03.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	6
	No:	Claims	1-5, 7-10
Inventive step (IS)	Yes:	Claims	6
	No:	Claims	1-5,7-10
Industrial applicability (IA)	Yes:	Claims	1-10
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1). Reference is made to the following documents:
D1 : US-A-3400078
D2 : EP-A-49009
D3 : EP634480

The documents D2 and D3 were not cited in the international search report.

2). ---------- [lack of novelty] ----------
The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-5 is not new in the sense of Article 33(2) PCT.

The document D2 discloses (the references in parentheses applying to this document): a process for the preparation of starch glue. Example II discloses a process whereby a composition comprising starch , which is a well known polysaccharide, sodium perborate and NaOH are added to water and heated.
It is clear that the starch is decomposed by the oxidant. The decomposition is to be understood as the viscosity is reduced.
The subject-matter of the claims 1-5 appears therefore to be known from D2.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of the claims 7-9 is not new in the sense of Article 33(2) PCT.
D3 discloses detergent compositions comprising among many components alkali metal percarbonate and anti-redeposition and soil-suspensions agents such as methylcellulose, carboxymethylcellulose and hydroxyethylcellulose. A concrete example is given on page 16, line 46- page 10. The compositions can be prepared by dry mixing (see page 13, line 46).

3). ---------[inventive step]--------
D1 represents the closest prior art and describes methods for preparing liquid compositions involving oxidizing carboxymethyl cellulose wherein it is essential that potassium hydroxide is always present in water before adding the cellulose ether and the oxdizing agent.

The subject-matter of claim 6 differs from D1 in that the alkaline depolymerization agent and the CMC are added simultaneously to the water.
The problem to be solved is to provide a process with which the polysaccharide or polysaccharide ether can be dissolved into the aqueous medium with a lower viscosity in one step, within an acceptable time period and with nearly complete consumption of the depolymerization agent.
The problem has effectively been solved. See examples 3 to 7.
The skilled person starting from D1 shall not at arrive at the subject-matter of claim 1 without an inventive step.
The skilled person could but would not find the solution in D2 since the degradative oxidation of starch is performed in the presence of a catalyst.
Therefore the subject-matter of claim 6 involves an inventive step.

CLAIMS

1. A process for preparing a solution of a polysaccharide or polysaccharide ether having a viscosity of 1,000 mPa.s or less comprising adding to an aqueous medium a polysaccharide or polysaccharide ether and an alkaline depolymerization agent, characterized in that the polysaccharide or polysaccharide ether and the alkaline depolymerization agent are added simultaneously to the aqueous medium.

2. A process according to claim 1, characterized in that a solid composition comprising the polysaccharide or polysaccharide ether and the alkaline depolymerization agent is added to the aqueous medium.

3. A process according to any one of claims 1-2, characterized in that the alkaline depolymerization agent is selected from the group consisting of sodium percarbonate, sodium perborate, carbamide peroxide in combination with a base, sodium persulfate in combination with a base, 3-chloroperoxybenzoic acid (m-CPBA) in combination with a base, and mixtures thereof.

4. A process according to any one of claims 1-3, characterized in that the base is sodium hydroxide or sodium carbonate.

5. A process according to claim 3, characterized in that the alkaline depolymerization agent is sodium percarbonate, sodium perborate or sodium persulfate in combination with a base.

6. A process according to any one of claims 1-5, characterized in that the polysaccharide ether is selected from the group consisting of carboxymethyl cellulose, hydrophobically modified carboxymethyl cellulose, hydroxyethyl

cellulose, hydrophobically modified hydroxyethyl cellulose, ethyl hydroxyethyl cellulose, and hydrophobically modified ethyl hydroxyethyl cellulose.

7. A solid composition comprising a polysaccharide ether and an alkaline depolymerization agent characterized in that the alkaline depolymerization agent is selected from the group consisting of sodium percarbonate, carbamide peroxide in combination with a base, sodium persulfate in combination with a base, 3-chloroperoxybenzoic acid (m-CPBA) in combination with a base, and mixtures thereof.

8. A composition according to claim 7, characterized in that the depolymerization agent is sodium percarbonate, or sodium persulfate in combination with a base.

9. A composition according to any one of claims 7-8, characterized in that the polysaccharide ether is selected from the group consisting of carboxymethyl cellulose, hydrophobically modified carboxymethyl cellulose, hydroxyethyl cellulose, hydrophobically modified hydroxyethyl cellulose, ethyl hydroxyethyl cellulose, and hydrophobically modified ethyl hydroxyethyl cellulose.

10. A composition according to any one of claims 7-9 comprising carboxymethyl cellulose and sodium percarbonate.